

### **REMARKS**

Applicants thank the Examiner for the very thorough consideration given the present application. Claims 1-12 are now in the application and claims 1, 4, 9 and 10 are independent. The Office Action dated August 6, 2009 has been received and carefully reviewed. Each issue raised in the Office Action is addressed below. Reconsideration and allowance of the present application are respectfully requested in view of the following remarks.

#### **Claim Rejections – 35 U.S.C. § 103**

Claims 1-9, 11 and 12 stand rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Pub. No. 2002/0073923 to Saito et al. (“Saito”) in view of Miyazaki and Sellback, and further in view of U.S. Pub. No. 2003/0228415 to Bi et al. (“Bi”). Applicants submit the Examiner has failed to establish a *prima facie* case of obviousness and respectfully traverse the rejection. A complete discussion of the Examiner's rejection is set forth in the Office Action, and is not being repeated here. In order to establish a *prima facie* case of obviousness under 35 U.S.C. § 103(a), the cited references must teach or suggest each and every element in the claims. See MPEP § 706.02(j); MPEP §§ 2141-2144.

By way of review, it is noted that in conventional techniques for alternately supplying a plurality of kinds of reaction gases one by one, a plurality of nozzles are separately disposed in a processing chamber for each gas, such as is described in paragraph [0006] of the Patent Application Publication of this application. By contrast, in one feature according to the present invention, a first supply tube, through which a first gas flows, and a second supply tube, through which a second gas flows, are connected to a single gas supply member. This results in several advantages.

While not conceding the appropriateness of the Examiner's rejection, but merely to advance prosecution of the instant application, Applicants respectfully submit that independent claims 1, 4 and 9 have been amended to recite a combination of elements in a substrate processing apparatus wherein the first and second gases are alternately supplied into the processing chamber through said gas supply member in a manner that does not allow said first and second gases to be mixed with each other. Applicants respectfully submit that this

combination of elements as set forth in independent claims 1, 4 and 9 is not disclosed or made obvious by the prior art of record, including Seelbach.

Saito shows a processing chamber 11, a heating member 16 and one controller 75 controlling the gas supply. However, Saito fails to show or suggest first and second gases alternately supplied into the processing chamber through the gas supply member in a manner that does not allow the first and second gases to be mixed because Saito requires that the gases be mixed in the chamber for deposition. Miyazaki merely teaches a gas supply member 30' in Figure 1 which supplies first and second gases into the processing chamber where they must be mixed for deposition, and fails to show or suggest first and second gases alternately supplied into the processing chamber through the gas supply member in a manner that does not allow the first and second gases to be mixed. Sellback shows a heating member 16 for tubing between the mass flow controllers and the processing chamber to increase vapor pressure for higher flow rates of high molecular weight materials  $\text{TiCl}_4$  and  $\text{WF}_6$ . Sellback fails to show or suggest first and second gases alternately supplied into the processing chamber through the gas supply member in a manner that does not allow the first and second gases to be mixed. And Bi is from the art of light driven chemical reactions such as laser pyrolysis, and shows a vapor reactant delivery apparatus in Figure 6 which includes an upstream carrier gas source 122, and a source of precursor compound at 120 downstream of mass flow controller 146 and an inert gas source 126 downstream of the "valve" 146. Bi fails to show or suggest first and second gases alternately supplied into said processing chamber through said gas supply member in a manner that does not allow said first and second gases to be mixed with each other, and therefore cannot remedy the defects of Saito, Miyazaki and Seelback discussed above.

Applicants note the Examiner's reliance upon *In re Walter* and *In re Casey*, etc. on page 4 of the Office Action for the proposition that the function of the controller recited in these claims is merely "intended use" and that there must be a recited "structural difference" to avoid the prior art. It appears the Examiner relies on this case law essentially to take the position that, because Saito shows a "controller", it is not necessary that the prior art address the function of the claimed controller in order to establish *prima facie* obviousness. Applicants respectfully submit that the instant claimed controller performs functions not shown or suggested by any of

the combined prior art, and therefore *prima facie* obviousness has not been established. With all due respect, Applicants submit there is no basis in law or in Examining practice as set forth in the MPEP for such a position. It is improper to ignore structural and functional limitations, and § 2173.05(g) of the MPEP makes this clear, stating in part:

There is nothing inherently wrong with defining some part of an invention in functional terms. Functional language does not, in and of itself, render a claim improper. *In re Swinehart*, 439 F.2d 210, 169 USPQ 226 (CCPA 1971).

A functional limitation must be evaluated and considered, just like any other limitation of the claim, for what it fairly conveys to a person of ordinary skill in the pertinent art in the context in which it is used. A functional limitation is often used in association with an element, ingredient, or step of a process to define a particular capability or purpose that is served by the recited element, ingredient or step. >In *Innova/Pure Water Inc. v. Safari Water Filtration Sys. Inc.*, 381 F.3d 1111, 1117-20, 72 USPQ2d 1001, 1006-08 (Fed. Cir. 2004), the court noted that the claim term "operatively connected" is "a general descriptive claim term frequently used in patent drafting to reflect a functional relationship between claimed components," that is, the term "means the claimed components must be connected in a way to perform a designated function." "In the absence of modifiers, general descriptive terms are typically construed as having their full meaning." *Id.* at 1118, 72 USPQ2d at 1006. In the patent claim at issue, "subject to any clear and unmistakable disavowal of claim scope, the term 'operatively connected' takes the full breath of its ordinary meaning, i.e., 'said tube [is] operatively connected to said cap' when the tube and cap are arranged in a manner capable of performing the function of filtering." *Id.* at 1120, 72 USPQ2d at 1008.<

In a claim that was directed to a kit of component parts capable of being assembled, the Court held that limitations such as "members adapted to be positioned" and "portions . . . being resiliently dilatable whereby said housing may be slidably positioned" serve to precisely define present structural attributes of interrelated component parts of the claimed assembly. *In re Venezia*, 530 F.2d 956, 189 USPQ 149 (CCPA 1976).

Claims 1, 4 and 9 clearly and positively recite functions that are attributes of the claimed controller, and these functions include the manipulation of claimed structure and gases in a manner not shown or suggested in the prior art. These functional and structural attributes define Applicants' contribution and clearly delimit the scope of the invention, and cannot properly be ignored. These limitations must be shown or suggested by the prior art or the claim is not obvious. Reconsideration and withdrawal of this rejection is respectfully requested. With regard

to dependent claims 2, 3, 5-8, 11 and 12 Applicants submit that claims 2, 3, 5-8, 11 and 12 depend, either directly or indirectly, from independent claim 1 which is allowable for the reasons set forth above, and therefore claims 2, 3, 5-8, 11 and 12 are allowable based on their dependence from claim 1. Reconsideration and allowance thereof are respectfully requested.

Claim 10 stands rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Jallepally in view of Saito, Miyazaki, Sellback and Bi. This rejection is also respectfully traversed. While not conceding the appropriateness of the Examiner's rejection, but merely to advance prosecution of the instant application, Applicants respectfully submit that independent claim 10 has been amended to recite a combination of steps in a semiconductor producing method including supplying a first one of said two gases to the single gas supply member through a first one of said two supply tubes for a first period of time while supplying an inert gas through a second one of said two supply tubes; after said first period of time, removing an atmosphere in the processing chamber; and thereafter supplying a second one of said two gases to the single gas supply member through the second one of said two supply tubes for a second period of time to form a film or films on said substrate or substrates while supplying an inert gas through the first one of said two supply tubes. Applicants respectfully submit that this combination of elements as set forth in independent claim 10 is not disclosed or made obvious by the prior art of record, including Jallepally, Saito, Miyazaki, Sellback and Bi.

Jallepally shows two supply tubes in Figure 7 for atomic layer deposition of a gas including an oxidizing agent and a second gas such as tantalum pentaethoxide, and the Examiner argues it would have been obvious to alternately supply the two gases. Saito, Miyazaki, Sellback and Bi have been discussed above, comments of which are incorporated herein. Applicants respectfully submit that to the contrary, Jallepally fails to show or suggest removing an atmosphere in the processing chamber after the first period of time and thereafter supplying the second one of the two gases for a second period of time to form a film or films on the substrate(s) while supplying inert gas through the first one of the two supply tubes. None of Jallepally, Saito, Miyazaki, Sellback and Bi show or suggest these features. Moreover, these features comprise a positive recitation of steps in a process which cannot be ignored as inherent. Finally, this combination of references fails to address the *Graham* Factual Inquiries necessary to

support the picking and choosing of various features from five disparate references and combining them in this manner, rather than providing the full consideration and development of those inquiries on the record, as required by MPEP § 2141. Applicants respectfully submit that the combination of elements as set forth in independent claim 10 is not disclosed or made obvious by the prior art of record, including Jallepally, Saito, Miyazaki, Sellback and Bi, for the reasons explained above. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

### **Conclusion**

All objections and rejections raised in the Office Action having been properly traversed and addressed, it is respectfully submitted that the present application is in condition for allowance. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Notice of same is earnestly solicited.

Prompt and favorable consideration of this Amendment is respectfully requested.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone Paul T. Sewell, Registration No. 61,784, at (703) 205-8000, in the Washington, D.C. area.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.14; particularly, extension of time fees.

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Respectfully submitted,

By 

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